

ABSTRACT OF THE INVENTION

The present invention discloses compositions as well as methods of making and using said compositions, having improved stability which, when applied to a variety of substrates and cured, form transparent coatings which have abrasion resistant properties, a matched refractive index to that of the substrate, and which can be tailored to control the extent of tint absorption (vide infra). The compositions comprise an aqueous-organic solvent mixture containing a mixture of hydrolysis products and partial condensates of an epoxy-functional silane, a carboxylic acid functional compound selected from the group consisting of carboxylic acids, multifunctional carboxylic acids, anhydrides, and combinations thereof, a metal oxide composite colloid, and a disilane. The coating compositions may further include a mixture of hydrolysis products and partial condensates of one or more silane additives, a colloidal silica material, and a tetrafunctional silane.